



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,174	10/21/2003	Nathan R. Draney	2269-5712US (02-1490.00/U)	3933
24247	7590	10/21/2004		EXAMINER
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			BREWSTER, WILLIAM M	
			ART UNIT	PAPER NUMBER
				2823

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,174	DRANEY ET AL. <i>[Signature]</i>	
	Examiner	Art Unit	2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 7 October 2004.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
 4a) Of the above claim(s) 29-33 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-28 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>102103</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-29 in the reply filed on 7 October 2004 is acknowledged.

Claims 29-33 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 7 October 2004.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 20-23, 25, 27, 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Baker, U.S. Publication No. 2003/0096507 A1.

Baker anticipates a method for processing a substrate, comprising:
in fig. 1, providing a substrate of a first material having a bare surface, step 100;
applying a layer of a second material to the bare surface, step 110;

bonding the layer of the second material to the bare surface, step 110; and removing the first material and the second material from the substrate at substantially equal rates, step 120;

limitations from claim 2, the method wherein removing the first material and the second material from the substrate at substantially equal rates comprises planarizing the substrate from the bare surface, p. 2, ¶ 21, wherein planarizing etches the claimed materials at substantially equal rates;

limitations from claim 3, the method wherein planarizing the substrate from the bare surface comprises substantially reducing an initial thickness of the substrate, p. 2, ¶ 21, wherein planarizing removes some of the base material;

limitations from claim 4, the method of claim 1, wherein removing the first material and the second material from the substrate at substantially equal rates comprises substantially reducing an initial thickness of the substrate, p. 2, ¶ 21, wherein planarizing removes some of the base material, and also the observer may view "substantially" as a subjective term;

limitations from claim 5, the method wherein providing a substrate of a first material having a bare surface comprises providing a semiconductor substrate, p. 1, ¶ 16;

limitations from claim 6, the method of claim 5, wherein providing a semiconductor substrate comprises providing a wafer of silicon, gallium arsenide, germanium or indium phosphide: silicon substrate, p. 1, ¶ 16;

limitations from claim 7, the method wherein the bare surface comprises a backside of the semiconductor substrate, p. 1, ¶ 16;

limitations from claim 8, the method further comprising oxidizing the bare surface prior to applying the layer of the second material, in fig. 2C, oxide film 180, p. 2, ¶ 24;

limitations from claim 20, the method further comprising telling irregularities in a surface topography of the bare surface by applying the layer of second material thereto, fig. 2B, 185 and 190, wherein the surface of the substrate has irregular topography at fine enough scale;

limitations from claim 21, the method, wherein applying the layer of the second material to the bare surface comprises substantially covering the bare surface with the second material; fig. 2C, 180 and 190;

limitations from claim 22, the method wherein removing the first material and the second material from the substrate at substantially equal rates comprises at least one of wet etching, dry etching, grinding, abrasive planarization, and chemical-mechanical planarization: fig. 1, step 130, chemical-mechanical planarization, p. 2, ¶ 21;

limitations from claim 23, the method of claim 1, further comprising removing first material from the substrate prior to applying the second material to the bare surface: cleaning by etching, p. 1, ¶ 16;

limitations from claim 25, the method wherein removing the first material and the second material from the substrate at substantially equal rates comprises

etching: wherein acid treatments, solvent treatments, oxidation/reduction treatments, and etch treatments contain some “substantial” etching of equal rates of compatible materials, p. 1, ¶ 16;

limitations from claim 27, the method wherein removing the first material and the second material from the substrate at substantially equal rates comprises etching, p. 2, ¶ 21;

limitations from claim 28, the method of claim 23, wherein removing the first material and the second material from the substrate at substantially equal rates comprises etching, p. 1, ¶ 16.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker as applied to claims 1-8, 20-23, 25, 27, 28 above, and further in view of Imai, Japanese Publication No. 359104523 A.

 Baker does not specify using a polymeric as a second material, but Imai does. Imai teaches

 limitations from claim 9, in fig. 3B, the method wherein the second material 2 comprises a polymeric material, CONSTITUTION;

limitations from claim 10, the method wherein the second material 2 includes at least one of the polymer groups comprising epoxies, acrylics, silicones, urethanes, siloxanes and ParylenesTM; epoxy, CONSTITUTION.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Imai's process with Baker's invention would have been beneficial because the invention allows for further structures to be attached to the substrate.

Claims 11, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker as applied to claims 1-8, 20-23, 25, 27, 28 above, and further in view of Buchwalter et al., US Publication No. 2004/0110010 A1.

Baker does not specify the application method of the second material to the substrate, but Buchwalter does. Buchwalter teaches limitations from claim 11, the method wherein the second material is a flowable material and is applied to the bare surface by one of screen-coating, stencil-coating, and spin-coating; spin-coating, p. 4, ¶ 52; limitations from claim 16, the method wherein the second material is one of a thermoset polymer and a radiation cross-linkable polymer, and wherein the second material is applied to the bare surface in a flowable state and cured to a hardened state, p. 4, ¶ 52, thermosetting during the brief heating stage; limitations from claim 17, the method wherein the second material comprises an epoxy, and the epoxy is partially cured to a tacky state prior to application to the

bare surface and further cured to bond to the bare surface and harden , p. 4, ¶ 52, once the epoxy is mixed with the hardener, the epoxy starts its curing process and becomes tacky; limitations from claim 18, the method further comprising hardening the second material on the bare surface, p. 4, ¶ 52; limitations from claim 19, the method wherein hardening the second material comprises curing the second material, p. 4, ¶ 52.

Buchwalter gives motivation in p. 2, ¶ 23-26. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Buchwalter's process with Baker's invention would have been beneficial because the invention since parts can be adhered and removed and reused if needed.

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker as applied to claims 1-8, 20-23, 25, 27, 28 above, and further in view of Bennett et al., U.S. Patent No. 6,235,387 B1.

Baker does not specify using the second material as a semisolid, but Bennett does. Bennett teaches

limitations from claim 12, the method, wherein the second material is at least a semisolid element and applying comprises laminating the at least a semisolid element to the bare surface, col. 22, line 31 - col. 23, line 23; limitations from claim 13, the method of claim 12, wherein the at least a semisolid element comprises one of a tape and film: tape col. 22, line 31 - col. 23, line 23;

limitations from claim 14, the method of claim 12, wherein the at least a semisolid element comprises a layer of the second-material placed on a backing layer, and applying comprises applying the layer of the second material to the bare surface and removing the backing layer: PET release liner, col. 22, line 31 - col. 23, line 23;

limitations from claim 15, the method of claim 14, further comprising applying a release layer to the backing layer before placing the second material thereon, and wherein removing the backing layer comprises releasing the layer of the second material from the backing layer using the release layer, col. 22, line 31 - col. 23, line 23.

Bennett gives motivation in col. 4, line 65 - col. 5, line 19. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Bennett's process with Baker's invention would have been beneficial because the invention provides an adhesive that is substantially free of fugitive or migratory surfactants and tackifiers.

Claims 24, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baker as applied to claims 1-8, 20-23, 25, 27, 28 above, and further in view of Stanley Wolf Ph.D. and Richard N. Tauber Ph.D. in Silicon Processing for the VLSI Era, Volume 1: Process Technology, Lattice Press, 1986, pp. 238-9.

While Baker does specify removing some of the first material prior to applying the second material, Baker does not specify using mechanical abrasion of the substrate. This is left to Wolf, V. I. Wolf, teaches

limitations from claim 24, the method of claim 23, wherein removing first material from the substrate prior to applying the second material to the bare surface is effected by a process including mechanical abrasion of the substrate, pp. 238-9, under section 4.4.11;

limitations from claim 26, the method of claim 23, wherein removing the first material and the second material from the substrate at substantially equal rates comprises planarizing the substrate from the bare surface, pp. 238, first paragraph under section 4.4.11;

Wolf gives motivation in pp. 238, first paragraph under section 4.4.11. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize that combining Wolf's process with Baker's invention would have been beneficial because the invention can rapidly remove material while keeping the surface planar.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William M. Brewster whose telephone number is 571-272-1854. The examiner can normally be reached on Full Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William M. Brewster

15 October 2004
WB